TUESDAY *september* 11

6:00 AM **BREAKFAST | LUAU GARDENS** *at leisure from 6:00 am to 7:30 am*

7:30 **CONFERENCE OPENING | AULANI BALLROOM**

INVOCATION Reverend Kealahou Alika, *Keawalai Congregational Church*

OPENING REMARKS
Paul Kervin, *Air Force Research Laboratory*
Raley Marek, *Air Force Research Laboratory*

WELCOME REMARKS
James "Kimo" Apana, *Mayor, Maui County*
Daniel K. Inouye, *United States Senator (via video)*

8:00 **MAUI SPACE SURVEILLANCE SYSTEM (MSSS)**
Session Chairs: Robin Orth, Tom Glesne

THE ROAD TO FIRST LIGHT Jim Mayo, *Logicon RDA (Invited Speaker)*

ADVANCED ELECTRO-OPTICAL SYSTEM OVERVIEW
Robin Orth, *Air Force Research Laboratory*

OVERVIEW OF THE MAUI SPACE SURVEILLANCE SYSTEM
Rob Medrano, *Air Force Research Laboratory*

MAUI HIGH PERFORMANCE COMPUTING CENTER OVERVIEW
Dale White, *Air Force Research Laboratory*

SPACE SURVEILLANCE, THE CORNERSTONE OF THE DOD STRATEGY FOR SPACE CONTROL
Brian K. Anderson, *HQ USSPACECOM/J5X*

10:30-10:45 **BREAK | BALLROOM TERRACE**

AEOS PRIMARY MIRROR TEMPERATURE PRE-CONDITIONING
Wayland C. Marlow, *Trex Enterprises Corporation*

CHARACTERIZATION OF ATMOSPHERIC TRANSMISSION IN THE THERMAL INFRARED
David J. Witte, *Pantera Consulting*

AMOS SITE ATMOSPHERIC SENSOR IMPROVEMENTS AND SENSOR DATA FUSION
Mark A. Skinner, *The Boeing Company*

THE DEVELOPMENT AND USE OF SMALL TELESCOPE TECHNOLOGY AT THE AMOS RESEARCH FACILITY Kris Hamada, *The Boeing Company*

RAVEN TESTING: ENSURING THE INTEGRITY OF THE SATELLITE CATALOG
Taft DeVere / Jason Randolph, *HQ SWC/AET*

PHOENIX: THE WIDE-FIELD TELESCOPE AT THE REMOTE MAUI EXPERIMENTAL SITE
Bryan Law, *The Boeing Company*

12:30 PM **LUNCHEON | SOUTH PACIFIC BALLROOM**

1:30 **BEYOND IMAGING**
Session Chair: Paul Sydney

THE MAUI/MALT PROGRAM: PROBING THE ATMOSPHERE AT THE EDGE OF SPACE
Chester S. Gardner, *University of Illinois*

SATELLITE ORIENTATION ESTIMATION ANALYSIS
David Gerwe, *The Boeing Company*

USING AMOS TELESCOPES FOR LOW RESOLUTION SPECTROSCOPY TO DETERMINE THE MATERIAL TYPE OF LEO AND GEO OBJECTS
Kira Jorgensen, *NASA JSC/NRC Associate*

A SNAP-SHOT IMAGING SPECTROMETER FOR SATELLITE CHARACTERIZATION
Dan O'Connell, *Oceanit Laboratories*

3:00-3:15 **BREAK**

AEOS RADIOMETER SUBSYSTEM (ARS) OPERATIONS AND DATA PRODUCTS ON THE AEOS 3.67M TELESCOPE ON MAUI
David E. Briscoe, *Logicon RDA*

RADIOMETRIC SIZING OF SMALL ORBITAL OBJECTS
John V. Lambert, *The Boeing Company*

VISUAL MAGNITUDE SATELLITE CATALOGUE RELEASE 1.0
Matthew Hejduk, *Titan Sencom*

PHOTOMETRIC CALIBRATION OF SHORT EXPOSURE IMAGERY
Bruce E. Stribling, *Air Force Research Laboratory*

4:30 **ADJOURN**

5:00 **OPTIONAL TOUR**

ADVANCED ELECTRO-OPTICAL SYSTEM (AEOS) FACILITY

WEDNESDAY *september* 12

6:00 AM **BREAKFAST | LUAU GARDENS**
at leisure from 6:00 am to 8:00 am

8:00 **LASER APPLICATIONS | AULANI BALLROOM**
Session Chairs: Linda Crawford, Kirstie Ayers

DOPPLER SPECTRAL SCANNING DIFFERENTIAL ABSORPTION LIDAR (DSS DIAL)
Dan Senft, *Air Force Research Laboratory*

HIGH ENERGY LASERS FOR SPACE DEBRIS REMEDIATION
Daryl Peterson, *Idaho National Engineering and Environmental Laboratory*

LARRA (LASER RADAR FOR RECOGNITION AND ASSESSMENT) PROGRAM SIMULATED LASER RADAR RETURNS AND COMPARISON TO HI-CLASS DATA
David Dayton, *Applied Technology Associates*

LASER RANGING TO THE MOON: A CONTINUING NASA LEGACY
Peter J. Shelus, *McDonald Observatory*

LASER CALIBRATION EXPERIMENT FOR SMALL OBJECTS IN SPACE
Jon Campbell, *NASA Marshall Space Flight Center*

10:00-10:15 **BREAK | BALLROOM TERRACE**

HI-CLASS/AEOS OPTICS SYSTEM: A VERSATILE TOOL FOR SPACE SURVEILLANCE AND BMDO APPLICATIONS
Richard Pohle, *Textron Systems Corp*

LIGHTWIRE: A NOVEL CONCEPT FOR FULL-DUPLEX COMMUNICATIONS BETWEEN THE EARTH AND LOW EARTH ORBIT
Thomas M. Shay, *University of New Mexico*

NEXT GENERATION LUNAR LASER RANGING
Tom Murphy, *University of Washington*

OPTICAL EFFECTS MODELING FOR ACTIVE SATELLITE TRACKING USING TASAT SPECKLE
Keith Bush, *Logicon Technology Solutions*

12:00 PM **LUNCHEON | SOUTH PACIFIC BALLROOM**

1:00 **KEYNOTE ADDRESS | PIKAKE BALLROOM**

VIEWS OF THE SOLAR SYSTEM: A 3D HDTV PRESENTATION
Eric Dejong, *Principal Investigator, Solar System Visualization Project, NASA/JPL*

1:30 **ADAPTIVE OPTICS**
Session Chair: Chris Neyman

AEOS ADAPTIVE OPTICS SYSTEM: ONE YEAR OF OPERATIONS
Chris Neyman, *Trex Enterprises Corporation*

ADAPTIVE OPTICS SYSTEM FOR THE 1.2M TELESCOPE OF YUNNAN OBSERVATORY
Wenhan Jiang, *Chinese Academy of Sciences*

NEW LIQUID CRYSTAL DEVICES FOR ADAPTIVE OPTICS
Sergio R. Restaino, *Air Force Research Laboratory*

2:30-2:45 **BREAK**

SINGULAR-VALUE FILTERING FOR DIM-OBJECT ADAPTIVE OPTICS COMPENSATION
David W. Tyler, *University of New Mexico*

BRANCH CUT SENSITIVE WAVEFRONT RECONSTRUCTION FOR LOW ELEVATION ANGLE VIEWING
David Gerwe, *The Boeing Company*

ON THE USE OF ACCELEROMETERS TO REDUCE DYNAMIC RANGE REQUIREMENTS IN AN ADAPTIVE OPTICS SYSTEM
Jeffrey T. Baker, *The Boeing Company*

YET ANOTHER WAVE OPTICS PROPAGATION SIMULATION
Brent Ellerbroek, *Gemini Observatory*

THURSDAY *september* 13

6:00 AM **BREAKFAST | LUAU GARDENS** *at leisure from 6:00 am to 8:00 am*

8:00 **KEYNOTE ADDRESS | AULANI BALLROOM**

AT THE CROSSROADS OF ASTRONOMY
James Breckinridge, *National Science Foundation*

8:30 **ASTRONOMY SESSION**
Session Chairs: Lewis C. Roberts, John Africano

OPTICAL/IR STUDY OF GAMMA-RAY BURSTS: CHALLENGES FOR RAPID RESPONSE ASTRONOMY
Ian Smith, *Rice University*

A NETWORK OF INFRARED CALIBRATION STANDARD STARS
Michael P. Egan, *Air Force Research Laboratory*

LONG-TERM SPECTROSCOPIC AND NEAR-INFRARED STUDIES OF X-RAY BINARIES
Z. W. Liu, *Purple Mountain Observatory*

HIGH DYNAMIC RANGE ASTROMETRY WITH THE AEOS ADAPTIVE OPTICS SYSTEM
Lewis C. Roberts, Jr., *The Boeing Company*

LINEAR SYSTEM PERFORMANCE ANALYSIS
Grant H. Stokes, *MIT Lincoln Laboratory*

10:00-10:15 **BREAK**

A SURVEY OF A-STARS
Jennifer Patience, *Lawrence Livermore National Laboratory*

ASTRONOMICAL APPLICATIONS OF COMPUTER TOMOGRAPHIC IMAGING SPECTROSCOPY
Daniel O'Connell, *University of Arizona*

AEOS OBSERVATIONS OF CLOUDS ON TITAN
Antonin H. Bouchez, *California Institute of Technology*

PHYSICAL PROPERTIES OF NEOS FROM AEOS
David Jewitt, *University of Hawaii*

NEAR-EARTH ASTEROID TRACKING AT THE MAUI SPACE SURVEILLANCE SYSTEM (NEAT/MSSS)
Eleanor F. Helin, *Jet Propulsion Laboratory, California Institute of Technology*

12:00 PM **LUNCHEON | SOUTH PACIFIC BALLROOM**

1:00 **ORBITAL DEBRIS**
Session Chairs: Kira Jorgensen, Paul Kervin

THE OPTICAL SPACE DEBRIS MEASUREMENT PROGRAM AT NASA
Eugene G. Stansbery, *NASA/Johnson Space Center*

THE DEVELOPMENT AND USE OF SMALL TELESCOPE TECHNOLOGY AT THE AMOS RESEARCH FACILITY
Jennifer Okada/Ken Cheung, *Oceanit Laboratories*

INFLUENCE OF SOLAR ACTIVITY AND UPPER ATMOSPHERE TO THE DEBRIS ENVIRONMENT
Liu Jing, *Chinese Academy of Science*

AN OPTICAL SURVEY FOR SPACE DEBRIS IN THE GEOSTATIONARY RING
Thomas Schildknecht, *University of Bern*

2:30-2:45 **BREAK**

A SURVEY FOR SPACE DEBRIS IN GEOSYNCHRONOUS ORBIT
Patrick Seitzer, *University of Michigan*

NEW WIDE FIELD 1M TELESCOPE FOR DETECTION OF NEAR-EARTH ASTEROIDS AND SPACE DEBRIS
Syuzo Isobe, *Japan Spaceguard Association*

SMALL OBJECTS OBSERVATION AND ANALYZING OF ATTITUDE MOTION FOR GEO OBJECTS
Kazuaki Nonaka, *National Space Development Agency of Japan*

SEARCH STRATEGIES AND TRIALS FOR A WIDE-FIELD ELECTRO-OPTIC SENSOR
Eric C. Pearce, *MIT Lincoln Laboratory*

4:15 **ADJOURN**

5:30 **LUAU AND ENTERTAINMENT | LUAU GARDENS**

FRIDAY *september* 14

FRIDAY

6:00 AM **BREAKFAST | LUAU GARDENS** *at leisure from 6:00 am to 8:00 am*

8:00 **DEVELOPMENTS IN HIGH PERFORMANCE COMPUTING | AULANI BALLROOM**
Session Chairs: Ed Williams, Dale White

A NEW PARALLEL BISPECTRUM ALGORITHM FOR LARGE FORMAT DETECTORS
Kathy Schulze, *KJS Consulting*

MAUI SCHEDULER NEXT GENERATION
Aaron Culliney, *Maui High Performance Computing Center*

APPLICATIONS ON HIGH PERFORMANCE CLUSTER COMPUTERS PRODUCTION OF MARS PANORAMIC MOSAIC IMAGES
Tom Cwik, *Jet Propulsion Laboratory, California Institute of Technology*

QUANTUM COMPUTATION: THE ULTIMATE FRONTIER
Chris Adami, *Jet Propulsion Laboratory, California Institute of Technology*

APPLICATIONS IN DISTRIBUTED QUANTUM COMPUTING NETWORKS
Deborah Jackson, *Jet Propulsion Laboratory, California Institute of Technology*

9:45-10:00 **BREAK**

IMAGING
Session Chair: Charles L. Matson

SPACE-TIME-POLARIZATION OPTICAL IMAGING THROUGH CLOUDS
Akira Ishimaru, *University of Washington*

EARLY LAUNCH DETECTION AND TRACKING CONCEPTS: CRITICAL ENABLER FOR BOOST PHASE INTERCEPT
Mark Rogers, *Ballistic Missile Defense Organization*

MODELS OF UNSCATTERED AND FORWARD SCATTERED PHOTONS: THE NATURE OF SO-CALLED "BALLISTIC" PHOTONS
Michael P. Egan, *Air Force Research Laboratory*

LIDAR CLOUD PENETRATION SIMULATOR
Qain Peng, *General Atomics*

CLOUD PENETRATION LASER RADAR EXPERIMENTS
Michael Salisbury, *Air Force Research Laboratory*

12:00 PM **LUNCHEON | SOUTH PACIFIC BALLROOM**

1:00 **IMAGING**

IMAGING THROUGH TURBID MEDIA: POST PROCESSING USING BLIND DECONVOLUTION
Charles L. Matson, *Air Force Research Laboratory*

MITIGATING TURBULENCE-INDUCED IMAGE BLUR USING MULTI-FRAME BLIND DECONVOLUTION
Paul Billings, *Textron*

HIGH DEFINITION IMAGING AS AN AUGMENTATION OF ADAPTIVE OPTICS
Jeffrey Baumgardner, *Center for Space Physics, Boston University*

2:00-2:15 **BREAK**

INFORMATION BASED OPTIMIZATION AND ASSESSMENT OF ITERATIVE IMAGE PROCESSING ALGORITHMS
Sudhakar Prasad, *University of New Mexico*

EXPERIMENTS IN DECONVOLUTION OF AO IMAGES OF THE GALILEAN SATELLITES
Michael E. Brown, *California Institute of Technology*

RADIANCE MAP IMPROVEMENT IN AEOS LWIR IMAGES
John B. West, *GRC International*

3:15 **CONFERENCE WRAP UP**
Paul Kervin, *Air Force Research Laboratory*

3:30 **ADJOURN**

POSTER PAPERS | Jade/Plumeria Ballroom

Spatially Variant Photometry and SV Deconvolution for AO Data
Douglas Currie, *Center for Adaptive Optics at UC San Diego*

Diversity Selection for NGST Wavefront Sensing
Bruce Dean, *NASA Goddard Space Flight Center*

Multiple-Scattering Laser Backscatter Through Cirrus Clouds
Michael Egan, *Air Force Research Laboratory*

Applications of Relay Mirrors to Provide Laser Capabilities over Air, Ground, and Space Continuum
Mary Hartman, *Air Force Research Laboratory*

Atmospheric Wave Propagation: Modeling and Results Associated with Maui/MALT
April Hiscox, *Pennsylvania State University*

Observed Optical Brightness Distributions of Deep Space Satellites
John V. Lambert, *The Boeing Company*

Astronomical Coronagraphy With the AEOS High Order Adaptive Optics System
James Lloyd, *University of California*

Performance Assessment of Maximum Entropy Overresolution Algorithm
Richard G. Lyon, *NASA/Goddard Space Flight Center*

An Update on Membrane Telescopes Used in Ground Based Astronomy
Dan Marker, *Air Force Research Laboratory*

Calibrating Image Orientation and Field Scale for Satellite Pose Estimation
Gordon Masten, *Logicon Technology Solutions*

Deconvolution and SNR in Optical Diffusion Tomography
Charles L. Matson, *Air Force Research Laboratory*

Utilizing Raven as a High Accuracy Network Orbit Determination System
Daron Nishimoto, *Oceanit Laboratories*

Theoretical Model for a Cloudy-Channel Laser Communications Experiment Between the Earth and the Space Shuttle
Thomas M. Shay, *University of New Mexico*

Automated Solar System Astrometry at McDonald Observatory
Peter J. Shelus, *McDonald Observatory, University of Texas*

Studying Gamma-Ray Bursts Using AEOS
Ian Smith, *Rice University*

Battlefield Ladar: Photons Per Pixel and Unit Time Under Various Obscurant Conditions
Roger J. Sullivan, *Institute for Defense Analyses (IDA)*

Scanning Surveillance of the Geostationary Orbit
Hiroaki Umehara, *Communications Research Laboratory, Japan*

Intelligence Data Analysis System for Spacecraft (IDASS)
Jason Ward, *Air Force Research Laboratory*

Microshutter Array Development for the Multi-Object Spectrograph for the New Generation Space Telescope, and its Ground-Based Demonstrator
Bruce Woodgate, *NASA Goddard Space Flight Center*

POSTER PAPERS